



Can We Make it Go Away?*

Activity E.d

GRADE LEVELS: 4-6

OBJECTIVE: To help us to realize that we cannot make things go away. they are always there, just in a different form.

MATERIALS:

Experiment #1:

- apple
- pot of moist soil

Experiment #4:

- nurses' scale
- person

Experiment #2:

- 3 steel cans
- can opener

Experiment #5:

- newspaper
- metal tweezers or tongs
- bunsen burner or matches
- metal bucket or other fireproof container
- bucket of water

Experiment #3:

- water
- powdered lemonade
- glass, spoon

VOCABULARY: solution, compact, dissolve

CONCEPT: We can never make something into nothing.

BACKGROUND:

Once something is created, it may change form, size, shape, chemistry, or appearance, but we can never make it go away. We try to make unwanted items such as garbage go away, but we will see that although they may disappear in one form, they will still be there another.

PROCEDURE:

Experiment #1:

1. Fill a pot or other container with soil, and weigh it.
2. Cut 1/2 of an apple and weigh it.
3. Bury the apple in the soil (It is gone).
4. Weigh pot with soil and apple.

Question: Did the apple go away? (No, it is just out of sight.)

Experiment #2:

1. Weigh 3 steel cans.
2. Cut the tops and bottoms off and then flatten the cans.
3. Weigh the cans again.

Questions: Did the cans go away? (No, they're just smaller.)

Did they lose weight? (No, they just changed shape.)

Experiment #3:

1. Take a pitcher of water and weigh it.
2. Measure out and weigh enough powder to make a pitcher of lemonade.
3. Dissolve the powder into the liquid and stir until it disappears.
4. Weigh the pitcher of lemonade and compare to the weight of the pitcher of water.

Question: Did the powder go away? (The powder is gone, but you can see from the increased weight of the lemonade compared with plain water that the ingredients in the powder are still there, but now in a dissolved form.)

Experiment #4:

1. Weigh a person on the nurse's scale.
2. Weigh a large empty glass, then fill with lemonade and weigh again.
3. Weigh a person, have them drink the glass of lemonade, then weigh them again.

Question: Did the person's weight change? (Yes, the person is now heavier because the weight of the lemonade has been added to their own weight.)

Experiment #5:

NOTE: Be very careful when working with a flame. the teacher may want to demonstrate this experiment.

1. Weigh a piece of newspaper.
2. Hold the newspaper with tongs or tweezers.
3. Outside, or in a well-ventilated place, light the paper and let it burn. Have a bucket of water on hand in case of emergency. Drop the flaming paper into a metal bucket or other fireproof container.
4. Collect all of the ash and weigh it.

Questions: Did the paper go away? (Yes, but not really. the elements in the paper changed form -- some went up in smoke and others stayed behind in the ash.)

Did the weight change? Why? (The weight decreased because we didn't measure what went up in smoke.)

FOLLOW UP:

Discuss the idea of making things go away. Where is away? We can never get rid of anything completely, we can just change it from one form to another.

Discuss how this relates to cleaning up the environment. For example, we can reduce the need for landfills by incinerating our wastes. But, incineration causes air pollution. When we remove pollutants from the smoke, we clean up the air, but we are still left with the pollutants to get rid of as solid or liquid wastes. Also, the ashes that are left behind must still be safely disposed of.

* Adapted from Cornell Waste Management Institute: Trash Goes to School